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# BEKASI-EAST JAKARTA AIRPORT AIR SIDE

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## Attachment

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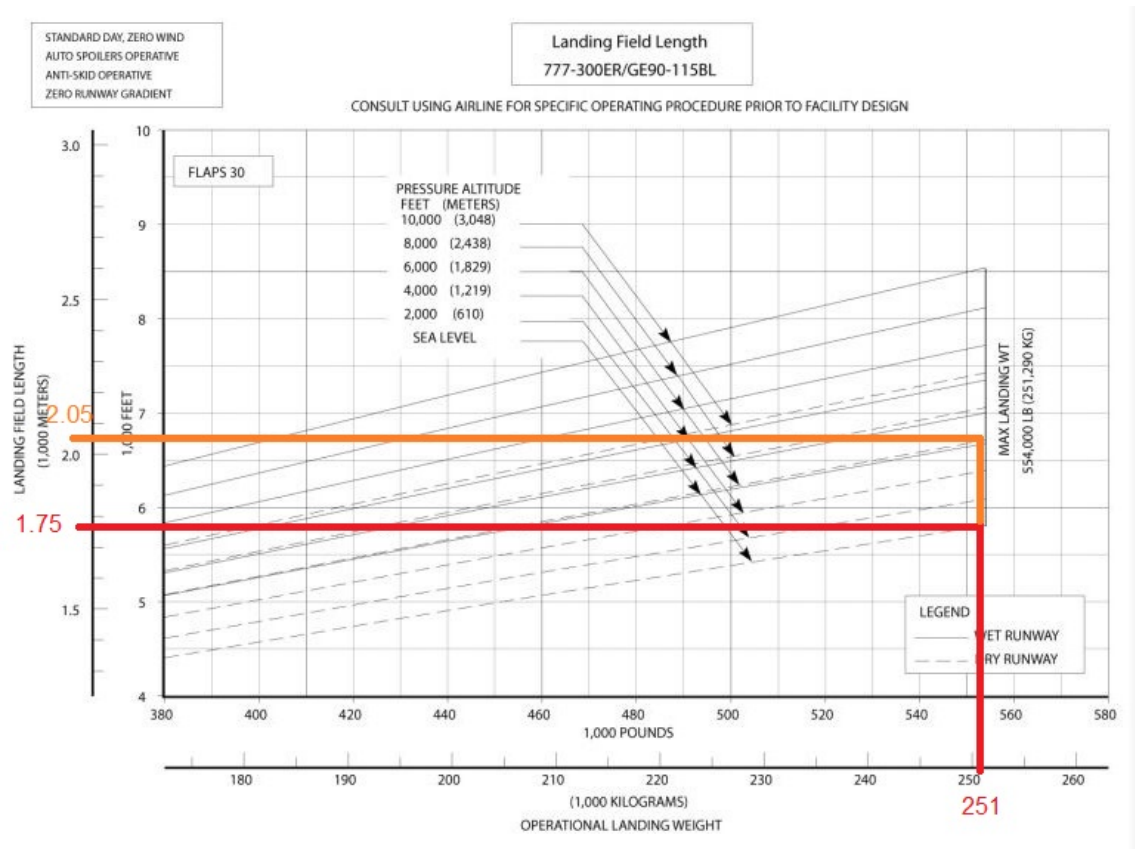


# 1 | Runway design

## 1.1 Declared distances

### 1.1.1 Runway 1

The first declared distance that will be calculated is the landing distance. Using the maximum landing weight (251.000kg) which can be found in the same paper and considering standard atmosphere conditions and sea level, the value can be obtained using the graph shown below:





## Declared distances

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The landing distance is 1.750m for dry runway and 2.050 for wet runway. Since the runway length is higher than those values, the available landing distance will be equal to the runway length. Now, increasing its value by a coefficient of 67%, the final landing distance obtained is 2.920m in dry runways and 3.417m.

The next distance that will be calculated is the takeoff length without engine failure (TODA). In order to calculate it, the reference field length (3.290m) will be corrected with a factor of 15. Moving into the takeoff length with engine failure (TORA), some hypotheses need to be done in order to calculate the final distance. Due to the fact that the engine failure occurs after the critical velocity ( $v_1$ ) which is achieved at the 70%. Finally, the last declared distance is the Accelerate-Stop Distance Available (ASDA). This distance also requires a hypothesis in order to be solved. The takeoff is cancelled before the critical velocity ( $v_1$ ), thus at the 65

### 1.1.2 Runway 2



## **2 | Taxiway design**

### **2.1 Introduction**

### **2.2 Taxiway width**

### **2.3 Taxiway turns**

### **2.4 Taxiway overwidths (sobreanchos)**

### **2.5 Taxiway shoulders**

### **2.6 Taxiway strips**

### **2.7 Rapid exit taxiways**

#### **2.7.1 Introduction**

#### **2.7.2 Number of rapid exit taxiways**

#### **2.7.3 Design of rapid exit taxiways**



## **3 | Holding positions**

### **3.1 Introduction**

### **3.2 Minimum distance between holding position and runway**

### **3.3 Interference with critical and ILS sensible areas**

### **3.4 Interference with CWY and physical obstacles**

#### **3.4.1 Separation between aircraft (guardas entre aeronaves)**

### **3.5 Final design of holding positions**



## **4 | Apron design**

### **4.1 Introduction**

### **4.2 Apron taxiways**

### **4.3 Aircraft stands**

#### **4.3.1 General dimensions of aircraft stands**

#### **4.3.2 Dimensions for reference aircraft**

#### **4.3.3 Aircraft stands organization**

### **4.4 No equipment and holding equipment areas**

### **4.5 Apron trajectories**

### **4.6 Service ways in apron**

### **4.7 Terminal connections**





## 5 | Markings

### 5.1 Runway markings

5.1.1 Runway centerline markings

5.1.2 Runway side strip markings

5.1.3 Runway threshold markings

5.1.4 Runway l designation marking

5.1.5 Runway aiming point markings

5.1.6 Runway touchdown zone markings

### 5.2 Taxiway markings

5.2.1 Taxiway centerline markings

5.2.2 Taxiway strip markings

5.2.3 Taxiway holding position markings

5.2.4 Intermediate holding position markings

5.2.5 Runway entry holding position markings

5.2.6 Mandatory instruction marking

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AIR SIDE

### 5.3 Apron markings

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5.3.1 Apron lead in line markings







## 6 | Lights

### 6.1 Runway lights

#### 6.1.1 Approach lights

#### 6.1.2 Approach slope indication systems

#### 6.1.3 Runway threshold identification lights

#### 6.1.4 Runway edge lights

#### 6.1.5 Runway threshold and wing bar lights

#### 6.1.6 Runway end lights

#### 6.1.7 Touchdown zone lights

#### 6.1.8 Runway rapid exit lights

### 6.2 Taxiway lights

#### 6.2.1 Taxiway lights

#### 6.2.2 Taxiway lights for an exit taxiway

#### 6.2.3 Taxiway light for a rapid exit taxiway

#### 6.2.4 Taxiway edge lights

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#### 6.2.5 AIR SIDE Stop bar lights

#### 6.2.6 Intermediate holding point lights



## 7 | Signs

### 7.1 Mandatory instruction signs

### 7.2 Information signs



## **8 | High-voltage electrical system**

**8.1 Electrical system general design**

**8.2 Connection sub-stations**

**8.3 Electric powerplant**

**8.4 Electrical transformation center**

**8.5 Channeling and distribution of the electrical system**





## **9 | Medium voltage electrical system**

### **9.1 Beacon circuits**

#### **9.1.1 Runway centerline lighting system**

#### **9.1.2 Taxiway centerline lighting system**

#### **9.1.3 Runway and taxiway centerlines lighting system**

#### **9.1.4 Approach lighting system**

#### **9.1.5 Touchdown zone lighting system**

#### **9.1.6 Runway header lighting system**

#### **9.1.7 RETIL electrical circuit**

#### **9.1.8 PAPI electrical circuit**

#### **9.1.9 Stop bar electrical circuit**

#### **9.1.10 Signs electrical circuit**

### **9.2 Regulation chambers**

### **9.3 Wire channeling**



## **10 | Aeronautical limitation surfaces**

**10.1 Physical limitation surfaces**

**10.2 ILS limitation surfaces**

**10.3 Localizer limitation surfaces**

**10.4 Gliding trajectory protection limitation surfaces**



## 11 | Bibliography